Amendments to the Claims:

No claims were amended herein. Please add new claim 33. The claims and their status are shown below.

1. (Previously presented) A method for labeling and identifying solid, liquid and gaseous substances (S1-n), comprising the steps of:

selecting at least one nucleic acid molecule from a first group of predefined nucleic acid molecules (N1-n), wherein each of the predefined nucleic acid molecules comprises an identification sequence section (IDS1-n),

contacting the substance (S1-n) with said at least one selected nucleic acid molecule (N1-n), thereby labeling the substance (S1-n),

providing a second group of nucleic acid molecules (N'1-n), wherein each nucleic acid molecule of the second group of nucleic acid molecules comprises a detection sequence section (IDP1-n) complementary to one of the identification sequence sections (IDS1-n), wherein each of the second group of nucleic acid molecules (N'1-n) is bound to a predefined site on a solid surface;

contacting said at least one selected nucleic acid molecule(s) (N1-n) with the nucleic acid molecules (N'1-n) provided from the second group under predefined hybridization conditions; and

detecting whether or not hybridization occurs, wherein when hybridization occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is identified, wherein when hybridization does not occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is not identified.

2. (Previously presented) The method as claimed in claim 1, wherein the identification sequence section (IDS1-n) is located between two primer binding sequence sections (PBS1, PBS2).

3. (Previously presented) The method as claimed in claim 2, wherein said identification sequence section (IDS1-n) comprises two identification sequence sections (IDS-A, IDS-B).

4. (Previously presented) The method as claimed in claim 3, wherein the identification sequence sections (IDS-A, IDS-B) are complementary to one another.

5. (Previously presented) The method as claimed in claim 2, wherein the primer binding sequence sections (PBS1, PBS2) have the same melting point.

6. (Previously presented) The method as claimed in claim 1, wherein the nucleic acid molecules (N1-n) are amplified.

7. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecules (N1-n) are linked on at least one end to an agent which counteracts degradation caused by exonuclease.

8. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecule (N1-n) is provided with a coupling group (A, B, C, D-Z).

9. (Previously presented) The method as claimed in claim 8, wherein the coupling group (A, B, C, D-Z) is selected from the group consisting of: a biotin group, an amino group, a thiol group, and a hapten.

10. (Previously presented) The method as claimed in claim 1, wherein a molecule carrying a fluorophoric group (F11-n) is bound to the predefined nucleic acid molecule (N1-n).

11. (Previously presented) The method as claimed in claim 8, wherein the coupling group (A, B, C, D-Z) is labeled with a fluorophoric group.

12. (Previously presented) The method as claimed in claim 1 wherein the predefined nucleic acid molecules (N1-n) are bound to the substance (S1-n) and wherein the substance (S1-n) is selected from the group consisting of antibodies, lectins, receptors, nucleotide sequences, PNA sequences, peptides, proteins, sugars, and ligands.

13. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecules (N1-n) are bound to particles (P) or are included therein.

14. (Previously presented) The method as claimed in claim 13, wherein the particles (P) are from 30 nm to 3 mm in size.

15. (Previously presented) The method as claimed in claim 13, wherein the particles (P) are silica, polystyrene, polyvinyl chloride, polyethylene, nylon or glass milk particles.

16. (Previously presented) The method as claimed in claim 13, wherein the particles (P) are selected from the group consisting of a viral capsid and a virus-like particle.

17. (Canceled)

18. (Previously presented) The method as claimed in claim 1, wherein hybridization of an identification sequence section (IDS1-n) with a complementary detection sequence section (IDP1-n) is detected by means of fluorescence.

19. (Previously presented) The method as claimed in claim 1, wherein at least two predefined nucleic acid molecules (N1-n) are added to the substance (S1-n) as a label.

20. (Previously presented) The method as claimed in claim 1, wherein the predefined nucleic acid molecules (N1-n) and/or the second group of nucleic acid molecules (N'1-n) are prepared synthetically.

21. (Previously presented) The method as claimed in claim 1, wherein the first group of predefined nucleic acid molecules (N1-n) and the second group of nucleic acid molecules (N'1-n) comprise nucleic acid analogs.

22. (Original) The method as claimed in claim 21, wherein the nucleic acid analogs are selected from the group consisting of PTO and PNA.

23. (Original) The method of claim 17, wherein the solid surface is selected from the group consisting of a chip, a microtiter plate, and film.

24. (Original) The method of claim 6, wherein said amplification is by PCR.

25. (Original) The method of claim 24, wherein said PCR uses fluorescently-labelled primers.

26. (Original) The method of claim 3, wherein said identification sequence sections (IDS-A, IDS-B) comprise primer binding sequence sections (PBS1, PBS2).

27. (Previously presented) A method for identifying solid, liquid and gaseous substances (S1-n), said substance having been labeled with at least one nucleic acid molecule selected from a first group of predefined nucleic acid molecules (N1-n), wherein each of the predefined nucleic acid molecules comprises an identification sequence section (IDS1-n), comprising the steps of:

providing a second group of nucleic acid molecules (N'1-n), wherein each of the nucleic acid molecules of the second group of nucleic acid molecules comprises a detection sequence section (IDP1-n) complementary to one of the identification sequence sections (IDS1-n), wherein each of the second group of nucleic acid molecules (N'1-n) is bound to a predefined site on a solid surface;

contacting said nucleic acid molecule(s) (N1-n) selected from the first group with the nucleic acid molecules (N'1-n) provided from the second group under predefined hybridization conditions; and

detecting whether or not hybridization occurs, wherein when hybridization occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is identified, wherein when hybridization does not occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is not identified.

28. (Canceled)

29. (Previously presented) The method of claim 1, wherein the melting temperature of each complete hybrid formed between said identification sequence sections (IDS1-n) and said complementary detection sequence section (IDP1-n) differ from one another by not more than 5°C.

30. (Previously presented) The method of claim 29, wherein the melting temperature of each incomplete hybrid due to partial complementary between said identification sequence sections (IDS1-n) and said detection sequence sections (IDP1-n) is more than 5°C lower than that of said each complete hybrid.

31. (Previously presented) A method for labeling and identifying solid, liquid and gaseous substances (S1-n), comprising the steps of:

selecting at least one nucleic acid molecule from a first group of predefined nucleic acid molecules (N1-n), wherein each of the predefined nucleic acid molecules comprises an identification sequence section (IDS1-n),

contacting the substance (S1-n) with said at least one selected nucleic acid molecule (N1-n), thereby labeling the substance (S1-n),

providing a second group of nucleic acid molecules (N'1-n), wherein each nucleic acid molecule of the second group of nucleic acid molecules comprises a detection sequence section (IDP1-n) complementary to one of the identification sequence sections (IDS1-n), wherein the melting temperature of each complete hybrid formed between said identification sequence sections (IDS1-n) and said complementary detection sequence section (IDP1-n) differ from one

another by not more than 5°C, wherein the melting temperature of each incomplete hybrid due to partial complementary between said identification sequence sections (IDS1-n) and said detection sequence sections (IDP1-n) is more than 5°C lower than that of said each complete hybrid;

contacting said at least one selected nucleic acid molecule(s) (N1-n) with the nucleic acid molecules (N'1-n) provided from the second group under predefined hybridization conditions; and

detecting whether or not hybridization occurs, wherein when hybridization occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is identified, wherein when hybridization does not occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is not identified.

32. (Previously presented) A method for identifying solid, liquid and gaseous substances (S1-n), said substance having been labeled with at least one nucleic acid molecule selected from a first group of predefined nucleic acid molecules (N1-n), wherein each of the predefined nucleic acid molecules comprises an identification sequence section (IDS1-n), comprising the steps of:

providing a second group of nucleic acid molecules (N'1-n), wherein each of the nucleic acid molecules of the second group of nucleic acid molecules comprises a detection sequence section (IDP1-n) complementary to one of the identification sequence sections (IDS1-n), wherein the melting temperature of each complete hybrid formed between said identification sequence sections (IDS1-n) and said complementary detection sequence section (IDP1-n) differ from one another by not more than 5°C, wherein the melting temperature of each incomplete hybrid due to partial complementary between said identification sequence sections (IDS1-n) and said detection sequence sections (IDP1-n) is more than 5°C lower than that of said each complete hybrid;

contacting said nucleic acid molecule(s) (N1-n) selected from the first group with the nucleic acid molecules (N'1-n) provided from the second group under predefined hybridization conditions; and

detecting whether or not hybridization occurs, wherein when hybridization occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of

said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is identified, wherein when hybridization does not occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N'1-n), the substance (S1-n) is not identified.

33. (New) A method for identifying a solid, liquid or gaseous substance, said substance having been labeled with at least one nucleic acid molecule selected from a first group of predefined nucleic acid molecules, wherein each of the predefined nucleic acid molecules comprises a known identification sequence, wherein said identification sequence is flanked on one side by a first primer binding site and on the other side by a second primer binding site, wherein the particular combination of nucleic acid molecules corresponds to said label, said method comprising the steps of:

contacting the substance with a first and a second primer, wherein said first and second primers bind to said first and second primer binding sites, respectively, and amplifying the identification sequence therebetween to produce an amplification product for each identification sequence in said label, wherein each amplification product is complementary to each identification sequence in said label,

contacting the amplification products with a solid surface under predefined hybridization conditions, wherein each identification sequence from the first group of nucleic acids is bound to a predefined site on said solid surface, wherein each amplification product hybridizes to its complementary identification sequence to thereby form a pattern of hybridization, wherein the pattern of hybridization allows for identification of said substance.